



Cisco Networking Academy Program





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"Jobs of the future will go where there is the best educated workforce, the right infrastructure and a supportive government."

John Chambers
President and CEO
Cisco Systems, Inc.

Education in a Changing Economy

The 1990s witnessed a technology revolution not unlike the industrial revolution that heralded the 20th century. As the steam engine fueled the new economy at the turn of the 20th century, computer and Internet-based technologies have become key economic drivers and fundamental to economic growth in the 21st century. Today's economy demands a technology-savvy workforce, which presents new challenges to educators worldwide. Educators must not only address traditional subjects such as reading, writing, and mathematics but must also incorporate skills such as problem solving, working with others and Internet technology skills into their curricula. It's a challenge that most educational systems cannot face alone.

In 1993, Cisco Systems, Inc. started partnering with educators to turn technology challenges into opportunities for growth. Cisco initiated a program to design practical, cost-effective networks for schools. Schools needed resident know-how for maintaining and evolving their networks. Cisco responded with training for teachers and staff that inspired a seminar program across the United States. The success of these seminars prompted schools to request a curriculum from Cisco that could be integrated as an elective course. The result was the Cisco Networking Academy™ Program.

Since being launched in 1997, the program has grown to more than 10,000 Academies in 50 U.S. states in nearly 150 countries with a curriculum taught in nine different languages. Over 400,000 students participate in Academies operating in high schools, colleges and universities, technical schools, community-based organizations, and other educational programs around the world. The Networking Academy program, a recognized blended learning model, integrates high-quality face-to-face teaching with the multimedia delivery of challenging curricula and embedded assessment over the Internet. It successfully prepares graduates for networking and IT-related jobs in the public and private sectors as well as for higher education in engineering, computer science and related fields. These efforts have also helped to wire schools while teaching educators and students how to manage their networks.

Changing the Way People Learn

Cisco Systems, Inc., the worldwide leader in networking for the Internet, understands how the Internet can effectively transform the ways in which people work, live, play, and *learn*. The Cisco Networking Academy Program is demonstrating how best to leverage the power of the Internet for student learning by truly integrating assessment with curriculum and instruction. The Networking Academy program empowers people through a comprehensive e-learning environment that enables them to learn anytime, anywhere, at their own pace, and with more targeted assessments and accountability than traditional class settings.

Developed by educators and networking professionals, the Networking Academy program delivers Web-based curriculum, hands-on labs, instructor training and support, and preparation for industry-standard certifications. Using the Internet to provide instructionally supportive-assessment, the Academy program provides immediate and ongoing feedback to teachers and students about the knowledge and skills students are—or are not—acquiring. This feedback allows teachers to modify and adjust their instructional approach on an ongoing basis over the duration of a course. The Networking Academy assessment strategy—comprised of a variety of interactive online exams and hands-on performance assessments—is designed to inform or improve learning, as well as hold students and teachers accountable for results. On average, more than 30,000 online assessments are taken daily in the Academy program worldwide. “We use assessment in the Networking Academy program for mastery, not just for measurement,” says John Morgridge, Chairman of the Board, Cisco Systems.

In addition to networking and other technology skills, the Academy program helps students improve math, science, writing, and problem-solving abilities while instilling in them the ability to work productively with others. To promote a well-rounded educational experience, the Academy curriculum is aligned with U.S. national and state math, science, and language arts standards as well as workforce competencies. Providing essential Internet technology skills, the Networking Academy program prepares students for the demands and opportunities of a global economy.

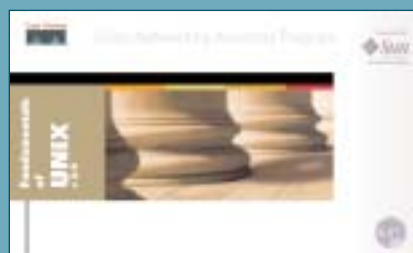


“One of the biggest challenges of our time is in fact an opportunity we stand to benefit from... Innovations in technology, particularly the increasing use of the Internet, have certainly brought us all closer. Technological advancements have fueled progress worldwide and we in the region still have many opportunities to capitalize on this. This initiative from Cisco, Cisco Foundation and UNIFEM is a living example of this and we welcome their efforts in helping women achieve their full potential in the workplace.”

Her Majesty Queen Rania Al-Abdullah
Jordan

"The Networking Academy program has had an extraordinary success in Veracruz, bringing development opportunities close to those communities most isolated through the use of Internet technology, and, in this manner converting itself into a means to combat poverty."

Dr. Cristina Loyo Varela
Director, Laboratorio Nacional de
Informática Avanzada
(LANIA), México



Curriculum and Certification Highlights

Consider that the average salary earned by Cisco certified professionals in the TCP Magazine Salary Survey (June 2002) is \$64,000. And, the more certifications one has, the greater his or her earning power. Industry certification translates into real economic development that benefits individuals and the communities in which they live.

Networking Academies prepare students for industry-recognized certifications. The curriculum provides in-demand Internet technology skills for designing, building and maintaining networks as well as basic skills in UNIX, Web design, IT Essentials, Voice and Data Cabling, and Java Programming. In mid-2003, courses in Security and Wireless will be added to the Academy curriculum. Combining instructor-led, online education with hands-on laboratory exercises, the curriculum enables students to apply what they learn in class while working on actual networks. From building a Web site to basic networking skills to advanced VLAN troubleshooting, the Networking Academy curriculum prepares students for industry certifications that lead to lifelong opportunities.

Curriculum and Certification Highlights

Cisco Certified Network Associate (CCNA)

Taught at the secondary and post-secondary levels, CCNA is a 280-hour curriculum, and the first step to a Cisco career certification path. Particular emphasis is given to using decision-making and problem-solving techniques in the application of science, mathematics, communication and social studies concepts to solve networking problems. Students learn how to install and configure Cisco switches and routers in multiprotocol networks using local and wide-area networks (LANs and WANs), provide Level 1 troubleshooting service, and improve network performance and security.

Upon successful completion of this course, students receive a Certificate of Completion. This curriculum also prepares students for the CCNA exam and for the Network+ certification, a vendor-neutral certification in basic networking skills, which is available through CompTIA (Computing Technology Industry Association).

Cisco Certified Network Professional (CCNP)

Taught primarily at the post-secondary level, the 280-hour CCNP curriculum requires students to have a CCNA certification. This advanced curriculum trains students to install, configure and operate local and wide-area networks, and dial access services for organizations of networks from 100 or more nodes with protocols and technologies such as: TCP/IP, OSPF, EIGRP, BGP, ISDN, Frame Relay, STP, and VTP. It focuses on developing skills that enable students to implement scalable networks, build campus networks using multilayer switching technologies, create and deploy a global intranet, and troubleshoot an environment using Cisco routers and switches for multiprotocol client hosts and services.

Upon successful completion of this course, students receive a Certificate of Completion and are prepared to take the CCNP exam. CCNA and CCNP together form a strong foundation, which may be built upon with additional course work to prepare for the Cisco Certified Internetwork Expert (CCIE™) certification. CCIE is the industry's most respected certification for network professionals.

IT Industry Sponsors

Courses sponsored by IT industry leaders broaden the Networking Academy program offerings, while increasing student skill sets and marketability.

Fundamentals of UNIX and

Fundamentals of Java Programming

are sponsored by Sun Microsystems. These 70-hour courses help prepare students for advanced education in UNIX and Linux administration, or Internet-based jobs and Java programming positions. Upon successful completion of these courses, students receive Certificates of Completion. For the Java course, students are prepared for the Sun Certified Programmer for Java 2. Fundamentals of Unix, in combination with IT Essentials II: Network Operating Systems, will help prepare students for the CompTIA Linux+ certification exam.

Fundamentals of Web Design is

sponsored by Adobe Systems and presently offered in the United States. The 70-hour Web design course offers hands-on Web design exercises using Adobe® Photoshop®, Adobe Illustrator®, Adobe GoLive™, Adobe LiveMotion™, and Adobe Premiere®. Upon successful course completion, students receive a Certificate of Completion and are prepared for the Web Designer Associate (CWDSA) certification sponsored by the Worldwide Organization of Webmasters (WOW).

Fundamentals of Voice and Data

Cabling is sponsored by Panduit Corporation and gives Cisco Networking Academies the opportunity to provide a curriculum on the physical aspects of voice and data network cabling and installation. Upon successful course completion, students receive a Certificate of Completion. This course along with additional course materials and work experience helps prepare students for the BICSI Registered Installer, Level 1 exam.

IT Essentials I: PC Hardware and Software and IT Essentials II: Network Operating Systems

are sponsored by Hewlett-Packard Company. These courses include an excellent introduction to Information Technology that includes an overview of IT, math for the digital age, introduction to networking, PC maintenance, safety and troubleshooting. Upon successful completion of courses, the students receive Certificates of Completion. IT Essentials I prepare students for the CompTIA A+ certification exam. Together, IT Essentials I and II will prepare students for the CompTIA Server+ certification exam. Additionally, IT Essentials II along with the Fundamentals of Unix course will help prepare students for the CompTIA Linux+ certification exam.



Academy Curriculum	Certification	Course Sponsor
Cisco Certified Network Associate	• CCNA • Network+ • Certificate of Completion	Cisco
Cisco Certified Network Professional	• CCNP • Certificate of Completion	Cisco
Fundamentals of Voice and Data Cabling	• BICSI Registered Installer, Level 1 Exam (with additional course and work experience) • Certificate of Completion	Panduit
Fundamentals of Java Programming	• Sun Certified Programmer for Java 2 • Certificate of Completion	Sun
Fundamentals of UNIX	• Linux+ (in combination with IT Essentials II) • Certificate of Completion	Sun
Fundamentals of Web Design (Currently only available in the U.S.)	• CWDSA • Certificate of Completion	Adobe
IT Essentials I: PC Hardware and Software	• A+ • Server+ (in combination with IT Essentials II) • Certificate of Completion	HP
IT Essentials II: Network Operating Systems	• Server+ (in combination with IT Essentials I) • Linux+ (in combination with Fundamentals of Unix) • Certificate of Completion	HP
Fundamentals of Security and Fundamentals of Wireless LANs	• Coming in Mid-2003	Cisco

The Internet and Education

“The majority of Rwandan women are single mothers and very, very poor. These women must be able to earn a living and support their children. And I intend to use the knowledge gained through the Networking Academy to help raise women out of poverty with the technical training to run organizations and develop businesses, and a communications network that enables information sharing among women’s forums.”

Beth Murora
Academy Graduate
United Nations
Economic
Commission
for Africa Academy,
Program Officer,
Ministry of Women’s
Affairs, Rwanda

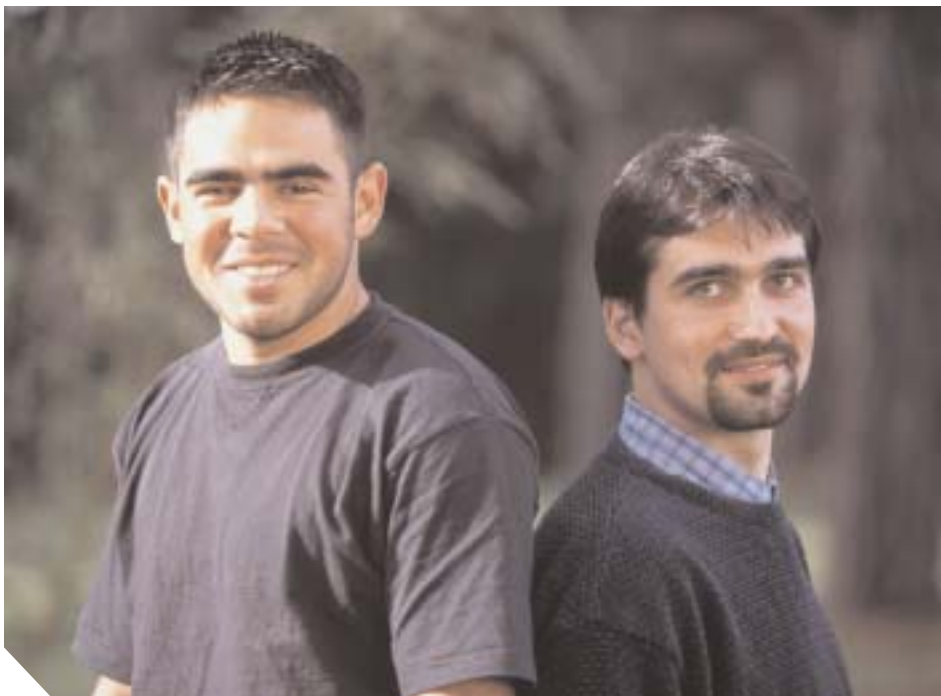
Global Equalizers for the 21st Century

The *haves* and the *have nots* are increasingly identified by the digital divide. Access to and knowledge of the Internet and its associated technologies can help to close that digital divide. Cisco understands that the digital divide can be bridged through the Internet and education—two great equalizers of this century. E-Learning (Internet-enabled education) eliminates barriers of time, distance, and socioeconomic status, allowing people to take charge of their own lifelong learning. The Cisco Networking Academy Program is designed to improve a student’s economic status and quality of life through employment or college admission.

To this end, Cisco and its partners are establishing Networking Academies to help eliminate the IT skills gap and demonstrate how the Internet can be used to advance social and economic development worldwide.

- In the United States, Cisco has established 183 Networking Academies in 30 of the 40 U.S. Empowerment Zones, which are areas defined by the U.S. government as underserved and experiencing severe poverty.
- Cisco is also working with the U.S. Department of Education’s designated Minority Serving Institutions to bring the Networking Academy program to African-Americans, Hispanics, Native Americans, Native Alaskans, Hawaiians and other minorities.
- The Networking Academy program provides accommodations for various disabilities including: learning disabilities, visual impairment, and hearing impairment.

At the G-8 Summit in July of 2000, Cisco Systems formed a strategic partnership with international development organizations to help train students in the world’s Least Developed Countries (LDCs) for jobs in the Internet economy. This partnership has created opportunities for skills development in participating countries, empowering them to accelerate progress, attain sustainable development, and fully integrate into the world economy.



Carlos Montoya and Florin Matei, Cisco Networking Academy Students

Working as partners, Cisco Systems, United Nations Development Program, United States Agency for International Development's Leland Initiative, and United Nations Volunteers are investing in education and technology training for LDCs. Cisco's initial \$3.5 million investment established its global Cisco Networking Academy Program in half of the world's 49 LDCs. To date over 90 Academies have been established in 32 LDCs around the globe.

Bringing the Cisco Networking Academy Program to developing countries and underserved communities will give people the skills to design, build and maintain the Internet infrastructure—a critical step to participation and employment in a global economy. Digital opportunities are also advanced through the Gender Initiative created by the Cisco Learning Institute (CLI) and Cisco Systems. CLI

is a public non-profit organization that furthers educational research and supports educational and charitable institutions. The Gender Initiative supports the recruitment and retention of women in the Cisco Networking Academy Program through a partnership with non-governmental organizations (NGOs), international organizations and governments. These organizations share a common goal of increasing opportunities for women through economic empowerment by providing them with access to education and training for 21st century workforce skills. For example, in 2001 and 2002, scholarships were awarded by UNECA (United Nations Economic Commissions Fund for Africa) to 50 African women who attended an Academy in Ethiopia for both English- and French-speaking women.



"We now have the Cisco Networking Academy Program for the first time in Afghanistan. Today we move towards the civilized world. We want to stand at the same level as the rest of the world in terms of technology. The network enables us to finally have a close relationship with the industrialized countries and become aware of the advantages of Information Technology. We can now be servants to the vulnerable people of our country using Internet/ computer services. The students of computer science promise to make ourselves ready to learn networking to the best of our ability. Finally, thanks to Cisco for paying attention."

Zakia Moradi
Academy student,
Computer Science Department,
Kabul University, Afghanistan
October, 2002

Global Partnering to Improve Education

"HP is deeply committed to broadening educational opportunities and providing exposure to technical career paths for students and communities around the world. We are excited to partner with Cisco Systems by providing the IT Essentials course work for the students as it prepares them for the challenges of the 21st century workplace."

Debra Dunn
Senior Vice President
Hewlett-Packard Corporate Affairs

Academy success is rooted in the Education Ecosystem created through partnerships with schools, colleges, businesses, non-profit organizations, international organizations, unions, and government agencies. These organizations contribute their talents, knowledge and resources to ensure the success and growth of Networking Academies in their communities. The highly collaborative partnerships that comprise the Education Ecosystem continue to evolve as they meet dynamic market needs.

Education Ecosystem

Curriculum Sponsors

Curriculum sponsors enhance Networking Academy program offerings by giving students a wider variety of courses, which will increase their knowledge and marketability.



Partners

- Adtran
- Cisco Press
- Communications Workers of America (CWA)
- CompTIA
- Fluke Networks
- Global Partnership for Youth Development
- International Telecommunications Union (ITU)
- International Youth Foundation (IYF)
- Least Developed Countries Governments
- Netformx
- Organization of American States (OAS)
- The Siemon Company
- SIGMANet
- United Nations Development Fund for Women (UNIFEM)
- United Nations Development Program (UNDP)
- United Nations Economic Commission for Africa (UNECA)
- United Nations Relief and Work Agency (UNRWA)
- United Nations Volunteers Program
- U.S. Agency for International Development (USAID)
- World Bank



Patrick Boole,
Cisco Networking Academy Student

An Educated Workforce Fuels Economic Development

The demand for a highly-trained, network-centric and IT-savvy workforce continues to increase with the complexity surrounding the design, implementation and maintenance of networks worldwide. ITAA studies indicate that thousands of IT-related jobs go unfilled every year. The Information Technology Association of America (ITAA) report, "Bouncing Back: Jobs, Skills and the Continuing Demand for IT Workers," May, 2002, indicates that almost 600,000 IT-related jobs will remain unfilled this year in the U.S., even in this challenging economy. In July, ITAA issued an update stating that it was anticipated that about 428,000 jobs would still remain unfilled in the U.S.

Cisco and its partners within the Education Ecosystem are working to ensure that a steady flow of qualified, competitively trained IT workers enter the workforce on an ongoing basis. As part of this mission, Cisco and the CLI joined SkillsUSA-VICA to promote the Internetworking Competition at the national SkillsUSA Championship. Cisco partners donating their expertise and support of the Internetworking Competition include Adtran, Communications Workers of America (CWA), Fluke Networks, Panduit Corporation, Siemon Company, and SIGMAnet.

Additionally, U.S. military personnel and communications workers are being trained for opportunities in the digital

economy through a Cisco alliance with the Communications Workers of America (CWA), Stanly Community College and the U.S. Department of Labor in the Workforce Transition Project.

Workforce Development

Cisco seeks to meet the burgeoning business demands of an Internet-based economy through various workplace learning initiatives. In a virtual forum, workplace learning programs bring together businesses, Academies, and students to match Academy students with job or internship opportunities. Partnering in local communities creates opportunities for real world work experience, including job shadowing, internships, mentor programs, and on-the-job training with local employers and organizations. Web sites, with search and match functions, offer businesses an opportunity to support education in their communities while helping prepare their future workforce.

The Cisco Networking Academy Program is built on Cisco's e-learning models. E-Learning does not, however, replace the teacher-student relationship. Cisco believes that e-learning can re-create, and improve upon, the benefits of personal instruction provided by teachers in traditional classroom settings. Therefore, students and instructors must be provided with interactive, rich-media technologies along with management tools for assessment and analysis.

"I was able to complete the Cisco Networking Academy Program at Erie Community College. I now have networking skills, telecommunication skills and an Associate's Degree. Verizon now has a technology professional who is grateful to the company that invested in him."

David Andrade
Academy Graduate
Telecommunication Technical Associate
Verizon



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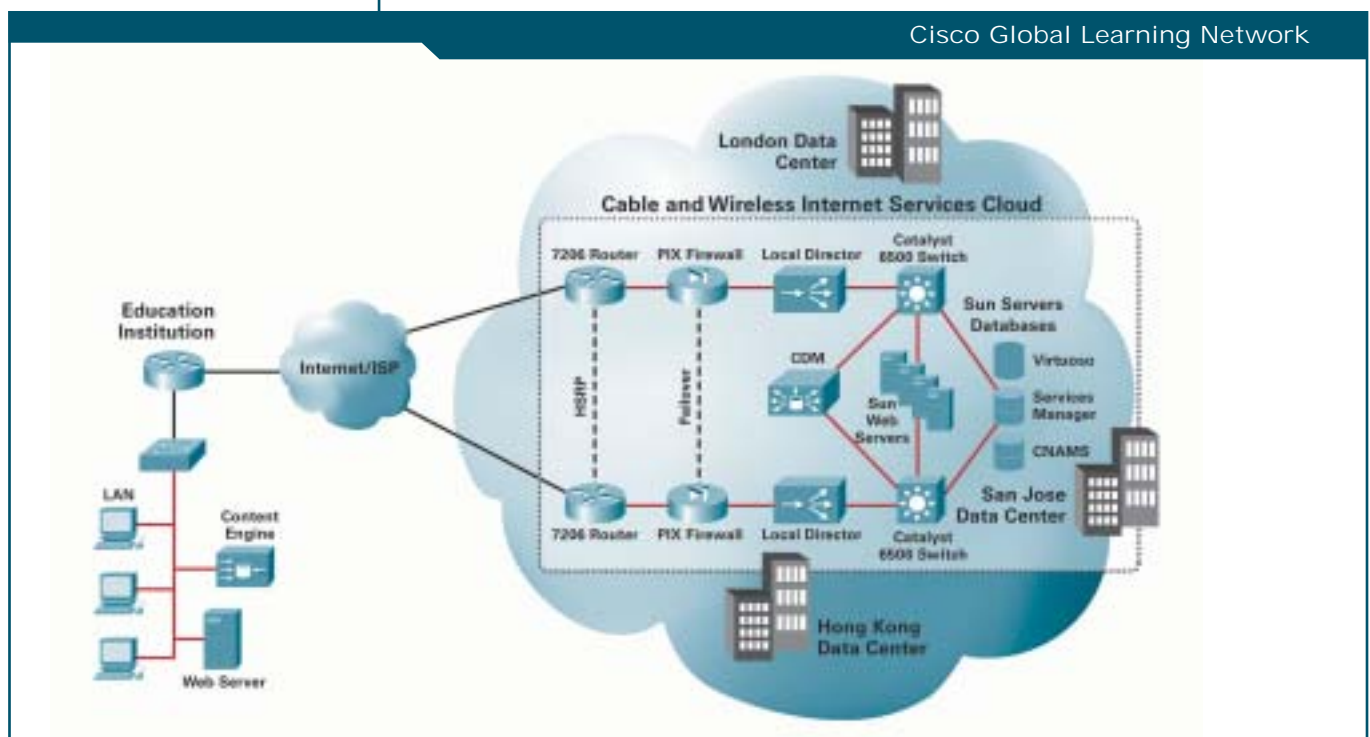
"The Networking Academy program will help solve the most immediate lack of networking skills in our region. Cisco's contribution is decisive."

They are leading in data networks and the Internet."

Carl Cederschiold
Mayor Stockholm Sweden

Network efficiencies, interactivity, multimedia, personalization, and an appreciation of multiple learning styles have all come together in the Cisco Global Learning Network (GLN). This standards-based, end-to-end network-enhanced learning infrastructure supports highly scalable, flexible, advanced e-learning. The GLN integrates e-learning applications in the Cisco Networking Academy Program including authoring, management, and assessment with rich media content, delivery, and a network infrastructure. Assessment capabilities are delivered by CLI Virtuoso™, an authoring and content delivery system for e-learning. CLI Virtuoso stores and delivers curriculum content and assessment questions and results for students according to mastery of the subject matter. Designed to meet a comprehensive range of e-learning requirements, GLN deploys network-enhanced learning through:

- **Personalized Feedback** providing students and instructors with information on each student's progress and proficiency level.
- **Internet-enabled Assessment** allowing teachers to personalize learning based on assessment results.
- **Rich Media Capabilities** promoting broad, media-intensive curricula for text, video, audio, interactive, and animated content, all of which addresses multiple learning styles and needs.
- **Integrated and Scalable Architecture** for a reliable and comprehensive end-to-end e-learning solution.



Visit the following Web sites for more information:

Cisco Networking Academy Program: <http://www.cisco.com/edu/academy>

Locating a Networking Academy: <http://www.cisco.com/edu/academylocator>

Cisco Education Information: <http://www.cisco.com/edu>

Cisco Learning Institute: <http://www.ciscolearning.org>



Academy Connection, <http://www.cisco.com/edu/academy>

“ The Cisco Networking Academies demonstrate that the Internet has the potential to be a valuable resource for improving education. For the Academies, the Internet has been important in developing and improving curricula, in distributing up-to-date curricula to underserved populations, in assessing student skills, in monitoring the quality of instruction, and in providing teachers with advice on technical and pedagogical issues and with a resource for keeping track of student progress and exam grades.” *

** Can the Internet Help Solve America's Education Problems? Lessons from the Cisco Networking Academies.* A paper prepared for the National Research Council Committee on the Impact of the Changing Economy on the Education. Authored by Richard J. Murnane, Harvard Graduate School of Education; Nancy S. Sharkey, Harvard Graduate School of Education; and Frank Levy, Department of Urban Studies and Planning, Massachusetts Institute of Technology.

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